

*For the Sub Editor of the B.M. J.
with the authors Compliments*

THE
Urban District Council
OF
WIRKSWORTH.

ANNUAL
R E P O R T

OF THE
Medical Officer of Health
FOR
THE YEAR 1895.

PRINTED BY ORDER OF THE COUNCIL.

J. GRATTON, CLERK.

ANNUAL REPORT

FOR THE YEAR 1895

OF THE

Medical Officer of Health of the
Urban District Council of
Wirksworth.

To the Chairman and Members of the Urban District Council of Wirksworth.

Gentlemen,—I beg to submit my report for the year 1895. The area of your district is 3020 acres, and its rateable value for district rate is £9102 16s. 11d., made up as follows :—Houses, etc., £7746 18s. 2d.; lands, etc., £1355 18s. 9d., an increase in 1895 of £215 16s. 11d. There are 902 inhabited houses and 78 uninhabited. During the year I attended to 45 complaints, wrote five reports to your Council, and 30 letters in reference to sanitary matters. I attended to 10 notifications of infectious diseases, visited the common lodging-house six times, and inspected the sanitary condition of the district generally.

Health of the District.—The severe frost, which began in December, 1894, and continued until March 9th, 1895, was the most remarkable meteorological feature of the year. The arctic-like winter caused general loss of health, and bronchitis, pneumonia, influenza, and colds were prevalent. September was the hottest month in the year, and during this month there was considerable diarrhoea, one death being attributed to that cause. Under the Infectious Diseases Notification Act, 1889, there were 10 notifications, viz., scarlet fever 9, erysipelas 1. The nine cases of scarlet fever occurred between March and November, and we may congratulate ourselves that they were so well isolated and disinfected. The disinfection was in several instances done under your inspector's supervision. The Infectious Disease (Prevention) Act, 1890, came into operation here in December, 1893. We are indebted to the masters of the elementary schools for their co-operation in keeping infected families from school and reporting absentees through sickness. There was no case

of small-pox, although one person attacked slept in the common lodging-house only the night before the eruption appeared. During the prevalence of small-pox in the county the common lodging house was frequently visited.

The population in 1895 is estimated at 3745. The number of births registered during the year was 108 (59 males and 49 females), making a birth-rate per 1000 of 28·8, which is somewhat below the average of England and Wales (about 30). The number of deaths registered belonging to the district was 75, giving a death-rate per 1000 of 20·02 as compared with 18·78 your average death-rate for the last 18 years. Of the 75 deaths, 25, or exactly one-third, were under five years of age. The death-rate of infants under one year to 1000 births was 148·14, or one child of every seven born. There were 20 deaths over 65 years of age, of which eight were over 70, and six were over 80. The death-rate from the seven principal zymotic diseases per 1000 of the population was ·265. There was no death from hazardous occupations. A death-rate for the year of 20·02 per 1000 population requires consideration. 31 of the 75 deaths occurred in the first four months of the year, and were doubtless connected with the severity of the weather. In March, seven out of ten deaths were over 70 years of age. Of the 16 children under one year of age, 15 belonged to the working classes, and 13 were under the age of four months. The causes of their deaths were as follows:— Diseases of the respiratory passages, 6; wasting (all under four months), 6; convulsions, 2; tubercular meningitis, 1; premature birth, 1. Diseases of the respiratory passages are directly connected with overcrowding and unsanitary surroundings. Wasting is generally due to improper feeding. I cannot help regarding six deaths from wasting, all under four months of age, as a blot on our year's mortality. It is, unfortunately, a matter of necessity for mothers among the poor to return to work as soon after confinement as possible. Their infants cannot receive the same amount of care, and have sooner to depend on artificial feeding, than if they were more favourably circumstanced. There is always considerable difficulty in artificial feeding, and, when combined with ignorance of what an infant can and cannot live upon, it must become a factor in producing infant mortality. The technical education lectures on sick nursing and the rearing of children should help the working-people to understand the hygienic requirements of young children, and especially the right and the wrong way of feeding infants.

The average mortality for the last 18 years is 18·78 for 1000 population. For the first nine years (1878 to 1886) the average was 18·64; for the last nine years (1887 to 1895) 18·91. Divided into three equal periods of six years the following table shows the average mortality at all ages, under 5 years of age, and over 60, in each period:—

Period.			Wirksworth.			
	England.	Deaths per 1000.	Deaths of Children under 1 per 1000 births.	Percentage of total deaths contributed by Children under 5.	Percentage of total deaths contributed by Persons over 60.	
1878-83 ..	20·1 ..	18·65 ..	142·3 or 1 child in 7 born	31·42 ..	39·16	
1884-89 ..	18·9 ..	17·91 ..	129·6 or 1 child in 8 born	30·17 ..	38·42	
1890-95 ..	18·9 ..	19·77 ..	133·3 or 2 children in 15 born	31·81 ..	37·69	

Thus we learn that while the general death-rate throughout the country has been decreasing ours has kept at a high figure with an upward tendency. Comparing the three consecutive periods of six years, the middle period (1884-1889) shews an appreciable decline, while the last period (1890-1895), which should have been still better, is the worst of all. We further learn that the death-rate of old people has been steadily falling throughout the eighteen years, that the infant mortality under five years of age fell in the middle period, but rose higher than ever in the last, and that under one year of age it fell in the second period, but rose again in the last, though not as high as in the first. The lesson is, that to reduce our death-rate we must aim at a reduction in our infant mortality. It is generally thought that we have a larger average proportion of infants and old people which would naturally give a higher death-rate. The 1891 census shews that compared with the county, we had 38 children under five years of age *more than our share*, and 98 persons over 60 *less than our share*.

Overcrowding.—The average number of persons per house in the district is four. No doubt this is exceeded in the smaller tenements, and the smaller the tenement the greater the death rate, the infant mortality in a one-room house being four times that of a four-room house. I am not aware of any one-room houses, but two-room houses are numerous. It is difficult to deal with overcrowding where the purse is in inverse proportion to the family, but you can, by adopting the model bye-laws relating to lodgings in houses under a certain rateable value, obtain the power to prevent overcrowding, caused by more than one family in a small house. These bye-laws are on similar lines to those in force for the common lodging-house, providing for returns from all houses under a certain rateable value receiving lodgers, for adequate cubic space, closet accommodation, cleanliness, and the supervision of infectious diseases. The adoption of these bye-laws will improve the condition of some of the dirtiest

and most closely packed houses in your district.

House Accommodation.—The house accommodation for the poor in an old town like yours is no better than can be expected. The old houses appear to have been built to last for ever, and are wanting in points considered nowadays essential for health. In such houses it is a matter of considerable difficulty to decide how far it is practicable to enforce modern requirements. The want of through ventilation, of adequate ventilation, or of ventilation at all is a common fault not confined to the poorest houses. There should be no difficulty in remedying this. During the year the plans of twelve new houses were submitted to you, and your Council rightly insisted that your model building bye-laws should be complied with.

Closet accommodation.—There are over 300 privies and middens in the district, for the most part built years ago, and consequently in site and structure not up to modern requirements. These should be brought up-to-date. It is not too much to ask that privies should be removed from house walls, have water-tight pits, be roofed over to exclude rain, and so arranged that the excreta and ashes can be mixed. There are about 100 privies against house walls, a number of leaky and dilapidated privies, and more often than not there is no mixing of excreta with ashes. I understand that about 300 privies are emptied a year, and the number of privies being at least 300, we find that on an average each privy is allowed to go a year without being emptied. From this it may be inferred that their storage capacity is too great. Human excreta remaining such a time near dwellings and particularly those in over-crowded parts, must produce a constant condition of foul air, and consequent insidious deterioration of health with increased mortality. In your district, removal of nightsoil devolves upon the householder, and is regulated by bye-laws which the above figures prove have not been kept. The matter has had your careful consideration, and you passed a resolution that “it was absolutely necessary for the health of the town that there should be no accumulation of nightsoil, and that it must be systematically removed as provided for in the byelaws.” If after a reasonable time it is still found impossible to prevent over-accumulation, it will be best for the Authority to repeal their byelaws and undertake the systematic removal themselves.

House Drains.—Trapping and disconnection are not as perfect or as general as they should be. Repeatedly my attention is directed to defects, some of long standing and of the utmost gravity. Your Sanitary Committee have also noticed the want of disconnection between sink pipes and drains. Absolute disconnection of all houses from sewers, and the systematic trapping of drains, will be a necessary sequel to our new sewerage system.

Sewerage.—I am sure it is your wish that the sanitary condition of your district should com-

pare favourably with other places of similar size, situation, and population, and that you would be pleased to know that your death rate was as low as the average Urban death rate in the county. But just as a manufacturer with obsolete and worn-out machinery would be beaten, so you, with an old sewerage system, find your health record and death rate do not keep pace with the times. A scheme for sewerage and sewage disposal, prepared by Mr. McCallum, of Manchester, has been accepted by you ; the difficulty is to find a site for the purification works.

Water.—Your water supply comes from the millstone grit, which near Wirksworth lies on the summit of a hill, and the water escapes near the base of the strata on the side of the hill ; the strata dips towards the Derwent valley, *i.e.*, away from the town, and the acreage of your gathering ground is probably small. The flow of the springs is found to vary immediately with the rainfall. During Winter months the supply has been as high as twelve and fourteen thousand gallons an hour but every year (except in an unusual one like 1891, when the rainfall was over 40 inches) for four or five months the springs yield less than 18 gallons per head per day, though only in four months in the last twelve years has the supply been below thirteen gallons per head per day. Your present reservoir holding 38,000 gallons is not worth consideration for storage ; practically you are served direct from the springs, and your water question is simply one of storage of your surplus supply in months of plenty. Doubtless, scarcity of water with consequent uncleanness and personal and domestic discomfort is considered by your ratepayers the most urgent need of the district. I think the more serious, more constant, and less noticed evils arising from bad sewerage and over-accumulation of night-soil are deservedly occupying your first attention. In good time you hope to provide the district with an adequate water supply. The Meerbrook Sough draining water from disused lead mines at a considerable depth under your district, with an outlet in the Derwent valley, near Whatstandwell Bridge, which was under the consideration of the County Council, has been pre-empted by the Derby Borough, and during the year their engineers have visited the district. I think it is immaterial to you who has the water, though, as the water is derived partially from within your district, it would be well for you to closely watch the powers, rights, and privileges that may be applied for.

Isolation Hospital.—The Belper Union, in which your district is situated, has been constituted an Isolation Hospital district by order of the County Council. After careful consideration, and your views had been laid before the Hospital Committee, you decided to join, having first assured yourselves that there would be no danger in removing

patients a distance of six miles, that the charge for moving patients would be uniform with the rest of the district, that beyond your share of establishment expenses you would pay for your own patients only, and that you would not derive greater advantages as to distance and cost by joining either of the other adjoining districts. The Hospital Committee have agreed to take over your small Hospital at Longway Bank, and propose to use it for all smallpox occurring in the district. They have appointed me the Medical Officer. Both the Infectious Hospital and the Smallpox Hospital will be provided with a disinfecting apparatus. It is impossible to overestimate the benefit that the district generally and the poor particularly, in whose houses isolation is impossible, will derive from these isolation hospitals and disinfecting apparatus. Scarlet fever, with which the infection lasts four or five weeks after the patient has ceased to be ill, and small-pox, are two diseases which you all agree can only be dealt with adequately by isolation. In reference to payment, I beg your attention to the remarks of Dr. Whitelegge:—"It is of the utmost importance if isolation is attempted upon a large scale to make the hospital free, and this is only reasonable since the public gain at least as much as the patient by his seclusion. The Sanitary Authority must not regard removal to hospital merely as a privilege sought by the patient and his friends, but as a more or less reluctant concession to the public safety. . . . An exception may be made in respect of the wealthy, who are willing to pay suitable fees for the use of private wards and special nurses."

For many years I have felt that in a district like ours, where from the great age of its dwellings and their surroundings, difficulty is experienced in enforcing modern requirements, the Sanitary Inspector should be free to devote a considerable portion of his time to sanitary work. I am pleased that recently your Council have relieved him from rate collecting, and I anticipate a marked improvement in the sanitary condition of the district as the result of more systematic inspection. I think it would be advantageous to adopt Part 3 of the Public Health Act, 1890, and suggest that your Sanitary Committee should consider and report upon it.

Tables will be found appended to my report giving the annual mortality for 18 years (1878 to 1895); the water bailiff's monthly returns of water supply for 1895; and the rainfall and mean temperature in each month of the year at Wirksworth as compared with those of the British Isles. For the rainfall and temperature records I am indebted to Mr. Gibbs, of Bridge House.—I have the honour to remain, Gentlemen,
your obedient Servant, A. E. BROSTER.

Wirksworth, Jan. 31st, 1895.

ANNUAL RATE OF MORTALITY—Death Rates of Children and Persons over 60 years of age, 1878 to 1895 inclusive.

	Annual Rate of Mortality.	Deaths of Children under 1 year, P.C. to total deaths.	Percentage of Deaths of Children under 1 year to registered births.	Deaths of Children under 5 years P.C. to total deaths.	Deaths of Persons over 60 years P.C. to total deaths.	Deaths of Persons over 65 P.C. to totl deaths.
1878	...	14.94	9.02	25.38	41.80	—
1879	17.6	39.38	20.52	34.18	40.51	—
1880	20.9	24.14	10.61	29.32	34.48	—
1881	15.77	26.00	11.58	32.76	43.11	—
1882	15.77	24.66	14.87	32.75	39.71	—
1883	19.72	23.17	18.80	34.14	35.36	—
1884	22.16	18.8	13.20	29.72	37.83	—
1885	20.00	20.31	11.50	25.00	43.75	—
1886	17.29	24.64	16.83	31.90	39.13	—
1887	18.65	15.87	9.09	33.30	42.85	—
1888	17.02	19.64	10.68	25.00	39.28	—
1889	15.1	22.2	16.50	36.10	27.70	—
1890	19.45	18.9	13.04	36.70	32.90	—
1891	21.35	15.38	9.90	24.61	47.69	—
1892	17.44	22.38	14.56	38.8	28.3	—
1893	17.95	24.4	19.46	36.6	37.7	—
1894	23.99	11.9	8.24	20.89	46.2	—
1895	17.9	21.3	14.81	33.3	33	28
	20.02

MONTHLY STATEMENTS OF WATER SUPPLY
by the Water Bailiff, shewing number of gallons per
hour flowing into the reservoir in 1895:—

Month. 1895.	No. of gallons per hour.
January	3500
February ..	9840
March	6500
April	6500
May	6500
June	4600
July	3760
August	3650
September	2730
October	2350
November	2208
December	3024

RAINFALL IN 1895.

At Bridge House, Wirksworth.			Average in the British Islands.	
Month.	Rain- fall.	Rainy days.	Rain- fall.	Rainy days.
January	4·69 inches	in 13 days	4·89 in	25 days.
February	0·90	3	1·25	11
March	2·93	18	2·78	21
April	2·76	10	2·14	16
May	0·83	5	0·92	8
June	1·24	6	1·74	11
July	5·53	18	3·49	17
August	2·12	18	3·85	18
September	0·79	7	1·71	10
October	2·93	15	4·41	22
November	4·41	21		
December	3·23	16		

Total....32·36..... in 150 Rainy days.

ANNUAL RAINFALL

At Bridge House, Wirksworth, since 1890.

1890	26·67 Inches.
1891	40·66
1892	28·69
1893	22·77
1894	29·55
1895	32·36

Average yearly rainfall for last six years, 30·11 inches.

(An "inch of rain" means a gallon of water spread over a surface of nearly two square feet, or 3630 cubic feet, equivalent to 100 tons upon an acre.)

TEMPERATURE.

Records taken at Bridge House in 1895.						Average in British Isl'ds in 1895.	
Mths.	Mean.	Mean Max.	Mean Min.	Highest.	Lowest.		
Jan...	31 $\frac{1}{2}$	34 $\frac{1}{2}$	28 $\frac{1}{2}$	46	17	37	
Feb...	29	33 $\frac{3}{4}$	24	44	7	33	
March	40 $\frac{1}{2}$	47 $\frac{2}{3}$	33 $\frac{1}{2}$	58	24	42	
April	45 $\frac{1}{2}$	51 $\frac{1}{2}$	36 $\frac{2}{3}$	62	28	47	
May..	53 $\frac{1}{2}$	62 $\frac{2}{3}$	44 $\frac{1}{2}$	78	40	52	
June	57 $\frac{1}{2}$	67 $\frac{1}{2}$	48	82	36	57	
July..	58 $\frac{1}{2}$	65	51 $\frac{1}{2}$	76	43	58	
Aug..	59 $\frac{1}{4}$	66	52	72	40	59	
Sep...	59 $\frac{1}{4}$	67 $\frac{1}{3}$	50 $\frac{2}{3}$	76	40	59	
Oct...	43 $\frac{1}{2}$	50	37 $\frac{1}{4}$	68	24	48	
Nov...	43 $\frac{3}{4}$	48 $\frac{1}{4}$	39 $\frac{1}{3}$	58	28		
Dec...	37 $\frac{3}{8}$	42	33	52	26		

